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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/767,450 | 01/29/2004 | Thomas Enne Hjort | A2000-700319 | 3938 |

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LOWRIE, LANDO & ANASTASI
RIVERFRONT OFFICE
ONE MAIN STREET, ELEVENTH FLOOR
CAMBRIDGE, MA 02142

| EXAMINER | |
|---|---|
| RUTLAND WALLIS, MICHAEL | |
| ART UNIT | PAPER NUMBER |
| 2835 | |

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H:A

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/767,450 | HJORT, THOMAS ENNE | |
| | Examiner | Art Unit | |
| | Michael Rutland-Wallis | 2835 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *29 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,12-14, 16 and 18-42* is/are rejected.

7)☐ Claim(s) *7-11,15 and 17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 October 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/06/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Specification*

The disclosure is objected to because of the following informalities: please amended page 11 of the disclosure to correctly identify U.S. application no. 10/470,124 is now U.S. patent 7,012,825

### *Claim Objections*

Claim 4 line 30 and twice again in line 31 the limitation "period" should be changed to "waveform period" it is noted by the office a wave period and time period are both defined in terms of seconds however they represent different quantifiable measurements therefore to provide clarity and definiteness to the claims limitation necessary amendments are hereby required. A similar objection is made to claims 5 and 6 when referring to multiple periods.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Jungreis et al. (U.S. Pat. No. 6,184,539)

With respect to claims 1 and 20 Jungreis teaches a system for providing power to a load, the system comprising: a first input to receive AC power from a first AC power source (item 10); a second input to receive AC power from a second AC power source (item 18); a third input to receive DC power from a first DC power source (item 16`); an output that provides output AC power to the load (item 14); and converter circuitry (rectification circuitry coupled to the AC power sources and DC-DC converters coupled to the DC power source), coupled to the first, second and third inputs and the output, adapted to provide the output AC power derived from at least one of the first AC power source, the second AC power source and the first DC power source.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 1-6, 12-14, 16, 18-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edevold et al. (U.S. Pat. No. 6,292,379) in view of Jungreis et al. (U.S. Pat. No. 6,184,539)

With respect to claims 1-2 and 20-21 Edevold teaches a system for providing power to a load, the system comprising: a first input to receive AC power from a first AC power source (item 18) and a third input to receive DC power from a first DC power source (battery module fitting in slot 14a see column 4 lines 63 column 5 line 9); an output (item 18) that provides output AC power to the load (not shown); and converter circuitry (inverter item 20 couple to AC inputs and conversion circuitry to convert the DC power from battery banks into AC power), coupled to the first, and third inputs and the output, adapted to provide the output AC power derived from at least one of the AC power source and the first DC power source. The use of a second input to receive AC power from a second AC power source is not taught by Edevold. The use of secondary AC sources such as AC generators or flywheels is well known in the art see for example Jungreis. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Edevold to use a secondary AC source like a generator or flywheel in the place of the additional battery banks of item 14b and 14c in order to maintain power to the loads after the batteries become depleted. Edevold further teaches the use of a first bypass (item 22) device coupled to the first input and the output and controllable to operate in a bypass mode (column 7 lines 1-17 describes operation of bypass mode and inverter mode) to couple the first input to the output to provide AC power from the first AC power source directly to the output, bypassing the converter circuitry.

With respect to claims 3 and 22 Edevold teaches a second bypass device (item 64) coupled to the secondary power sources. While the second bypass device of

Edevold is connected to inversion circuitry due to the fact it is supplied from a DC source one of ordinary skill in that art would recognize that Edevold as modified in claim 2 to contain a secondary AC source would not require such circuitry and therefore the would be coupled to provide AC power directly to the output bypassing any conversion circuitry.

With respect to claims 4 and 12 Edevold teaches the converter circuitry includes a plurality of controllable switches (items 66 or 70 also controller item 24 inherently contains switching control logic), each of the controllable switches being coupled the first input (item 16) to control current draw by the converter circuitry from the first AC power source, the second AC power source and the first DC power source. Edevold teaches the converter circuitry is adapted to detect (via item 26) an input AC voltage waveform period of the first AC power source and to control (via controller item 24) the controllable switches such that the converter circuitry draws current from the first AC power source during a first portion of the period and the converter circuitry draws current from the first DC power source during a second portion (i.e. fault periods the waveform) of the period for multiple periods.

With respect to claims 5 and 13 Edevold teaches a control operation and component arrangement of figure 12 is present in power modules 12a-12c therefore the second at third power modules (i.e. the second AC input) comprise control circuitry and detection similar to that identified in claim 4 is present in all of the power modules and operates similarly to that of figure 5 and associated description referenced in the rejection of claim 4

With respect to claims 6 and 14 Edevold teaches at least 3 battery banks maybe added to empty slots 14a-14c input to receive DC power from a second DC power source (battery banks not shown), and wherein the converter circuitry is coupled to the fourth input through a controllable switch that is controlled in the first transition mode to draw current from the second DC power source during the first portion of the period for multiple periods.

With respect to claims 16,19,28, 30,36 and 38 while Edevold is silent on the type of polarity and voltage magnitude of the second DC source it would have been obvious to one of ordinary skill in the art at the time of the invention to make the battery arrangement of the Edevold opposite in polarity and magnitude in order to reduce to eliminate excess conversions circuitry and to make the battery supplies in a modular fashion.

With respect to claim 18 while neither Edevold nor Jungreis specifically calls out the use of a thyristor both Edevold and Jungreis teaches the use of solid state switching devices such as diodes and transistors therefore the it would have been obvious to one of ordinary skill in the art at the time of the invention to use a thyrsistor switch in the place of the transistor switched of Edevold for example in order to increase switching speed.

With respect to claims 23 and 31Edevold teaches the converter means includes means for transitioning (item 24 controller associated with first input) a draw of input current by the converter means from the first AC power source at the first input to the first DC power source at the third input, such that during a first transition period

(switching to backup source), input current is drawn by the converter means alternately from the first AC power source and the first DC power source.

With respect to claims 24 and 32 Edevold teaches the converter means includes means for transitioning (item 24 controller associated with third input) a draw of input current by the converter means from the first AC power source at the first input to the first DC power source at the third input, such that during a first transition period, input current is drawn by the converter means alternately from the first AC power source and the first DC power source.

With respect to claims 25 and 33 Edevold teaches at least 3 battery banks maybe added to empty slots 14a-14c input to receive DC power from a second DC power source (battery banks not shown), and wherein the converter circuitry is coupled to the fourth input through a controllable switch that is controlled in the first transition mode to draw current from the second DC power source during the first portion of the period for multiple periods.

With respect to claims 26 and 34 Edevold teaches the converter means includes means for transitioning (item 24 controller associated with fourth input) a draw of input current by the converter means from the first AC power source at the first input to the first DC power source at the third input, such that during a first transition period, input current is drawn by the converter means alternately from the first AC power source and the first DC power source.

With respect to claim 27 Edevold teaches the converter means includes regulator means (diodes also see items 70) for producing a first regulated DC voltage, and a second regulated DC voltage (DC bus item 68).

With respect to claim 29 Edevold teaches a means for converting the first regulated DC voltage and the second regulated DC voltage to an AC voltage to provide output AC power.

With respect to claim 31 Edevold teaches the converter means includes means (item 24 controller associated with first input) for transitioning a draw of input current by the converter means from the first AC power source at the first input to the first DC power source at the third input, such that during a first transition period (switching to backup source), input current is drawn by the converter means alternately from the first AC power source and the first DC power source.

With respect to claim 35 Edevold teaches the converter, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the use of a regulation circuitry in order to regulate the DC voltage such as the conversion and control circuitry seen in Edevold as well as in Jungreis

With respect to claim 37 Edevold teaches converting the first regulated DC voltage (item 68) and the second regulated DC voltage would have been obvious further Edevold teaches an AC voltage to provide output AC power (item 18).

Claims 39-42 are method claims, which are inherently necessitated by the system claims of 1-39, therefore the rejection of claims 39-42 are rejected under the

same art (Edevold et al. (U.S. Pat. No. 6,292,379) in view of Jungreis et al. (U.S. Pat. No. 6,184,539)) applied above

### *Allowable Subject Matter*

Claims 7-11 and 15, 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The further limitation of the converter circuitry to contain first and second DC regulation circuitry configured and connected as claimed in connection with a first, second, third, fourth, fifth and sixth controllable switch to operate and be arranged in the claimed configuration. These further limitations to claim 6 and 14 is not taught or rendered obvious by the prior art.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. de Vries (U.S. Pat. No. 6,433,444), Saki et al. (U.S. Pat. No. 6,381,156) teach similar systems to that of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Rutland-Wallis whose telephone number is 571-272-5921. The examiner can normally be reached on Monday-Thursday 7:30AM-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MRW

LYNN FEILD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800